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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,450	04/19/2001	Satoshi Ishikura	60188-051	6764

7590 06/19/2002

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EXAMINER
OWENS, DOUGLAS W

ART UNIT	PAPER NUMBER
2811	

DATE MAILED: 06/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/837,450	ISHIKURA ET AL.	
	Examiner	Art Unit	
	Douglas W Owens	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12 and 13* is/are allowed.

6)☒ Claim(s) *1-4,7 and 8* is/are rejected.

7)☒ Claim(s) *5 and 9-11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 April 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. Figures 15-19B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 5,464,996 to Hynecek.

Regarding claim 1, Hynecek teaches a semiconductor device (Figs. 3 and 7) comprising:

a substrate;

a source/drain diffused layer for a transistor;

a dummy diffused layer (26, 28, Col. 1, lines 22-24); and

wherein the dummy diffused layer has its surface partially covered with an anti-silicidation film (42).

Hynecek does not teach a device, wherein the source and drain have silicided surfaces. It would have been obvious to one of ordinary skill in the art to silicide the source/drain regions, since it is desirable to reduce resistance between the source/drain and subsequently formed interconnection structures.

Regarding claim 2, Hynecek teaches a device, wherein the ant-silicidation film is an oxide.

Regarding claim 3, Hynecek does not teach a device, wherein a dopant used in the source/drain region is not used in the dummy region. It would have been a matter of obviousness to select a donor impurity from those that are known, such as phosphorus or arsenic. It is not considered inventive to use, for example, phosphorus for the source/drain impurity and arsenic for the dummy region since they are each art recognized substitutes one for the other.

5. Claims 4, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 5,867,434 to Oh et al.

Regarding claims 4 and 8, Oh et al. teaches a semiconductor device (Fig. 2), comprising:

a substrate;

a source/drain diffused layer for a transistor (Col. 3, line 65 - Col. 4, line 6);

a dummy diffused layer in the substrate (Col. 4, lines 6-8, the dummy drain is located under dummy bitline contact 151); and

wherein the dummy diffused layer is partially covered with a gate electrode (111, 112, 113, 114, 115 and 116) having the same structure as the gate electrode for the transistor.

Oh et al. does not explicitly teach forming a dummy diffused region comprising a dopant of the second conductivity type in a well of the first conductivity type. Oh et al. teaches a dummy diffused region that is part of a dummy transistor. It is considered a matter of obviousness to form transistors, such as n-channel, in a p-well since the p-type dopant is needed for the channel region.

Oh et al. does not teach a device, wherein the source and drain have silicided surfaces. It would have been obvious to one of ordinary skill in the art to silicide the source/drain regions, since it is desirable to reduce resistance between the source/drain and subsequently formed interconnection structures.

Regarding claim 7, Oh et al. does not teach a device, wherein a dopant used in the source/drain region is not used in the dummy region. It would have been a matter of obviousness to select a donor impurity from those that are known, such as phosphorus or arsenic. It is not considered inventive to use, for example, phosphorus for the source/drain impurity and arsenic for the dummy region since they are each art recognized substitutes one for the other.

Allowable Subject Matter

6. Claims 12 and 13 are allowed.

7. Claims 5, 6, 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach a gate electrode divided into two portions, nor the dummy gate being held at a fixed potential.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas W Owens whose telephone number is 703-308-6167. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

DWO
June 17, 2002

Steven Loke
Primary Examiner

Steven Loke